

PATENT ## S Atty. Docket: 54320.000008 U.S. Patent Appln. Serial No. 09/824,053 # 12.4.02

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:	)		3
Peter STOUGAARD et al.	)		出的
Serial No.: 09/824,053	)	Group Art Unit: 1652	DE210
Filed: April 3, 2001	)	Examiner: William W. Moore	

For: RECOMBINANT HEXOSE OXIDASE, A METHOD OF PRODUCING SAME AND USE OF SUCH ENZYME

## INFORMATION DISCLOSURE STATEMENT

Director of the United States Patent and Trademark Office Washington, D.C. 20231

Sir:

In accordance with 37 C.F.R. §§ 1.56, 1.97, and 1.98, Applicants respectfully request consideration of the references listed on the attached Form PTO-1449. Pursuant to 37 C.F.R. § 1.98 (d), Applicants have enclosed copies of the cited references that were not previously submitted by Applicants or cited by the Examiner in a prior application. References that are not provided herein were previously provided in prior U.S. Patent Application No. 08/669,304 (which was filed on July 12, 1996 and issued as U.S. Patent No. 6,251,626). However, copies of any of the cited references will be forwarded at the request of the Examiner. Applicants rely on the prior application for an earlier filing date under 35 U.S.C § 120.

Applicants respectfully request that the Examiner consider the references cited on the Form PTO-1449 and that the Examiner indicate that the references have been considered in this application by returning a copy of the Form PTO-1449 with the Examiner's initials in the left column as per MPEP § 609.

Applicants also wish to bring to the Examiner's attention a co-pending U.S. patent application, U.S. Application Serial Number 09/932,923 (which is a Continuation of U.S.

PATENT

Atty. Docket: 54320.000008

U.S. Patent Appln. Serial No. 09/824,053

Application Serial Number 08/676,186, filed on July 12, 1996, as a national phase of PCT Application PCT/DK96/00239, and issued as U.S. Patent No. 6,358,543). Applicants submit that the co-pending application is not material to patentability of any claims in the present case. Nonetheless, Applicants are bringing it to the Examiner's attention. A copy of the co-pending patent application is provided herewith. An indication of consideration of the co-pending application by the Examiner would be appreciated.

Applicants respectfully note that the submission of the listed references in this Information Disclosure Statement is not an admission that they are prior art or that they are material to patentability of any claims of the application. Also, the submission of this Information Disclosure Statement is not an indication that a search has been made.

This IDS is submitted prior to the issuance of a first Office Action on the merits; therefore, it is believed that no fees are required in connection therewith. If any fees are necessitated by the filing of this Information Disclosure Statement, please charge the undersigned's Deposit Account No. 50-0206.

Respectfully submitted, HUNTON & WILLIAMS

Date: November 4, 2002

Stanislaus Aksman

Registration No. 28,562

Scott F. Yarnell

Registration No. 45,245

1900 K Street, N.W., Suite 1200 Washington, D.C. 20006-1109 Ph. (202) 955-1500 Fax (202) 778-2201 NOV 0 1 2002

FORM PTO-1449 (REV. 7-80)

# DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

### LIST OF MATERIALS CITED BY APPLICANT

(Use several sheets if necessary)

ATTY. DOCKET NO.:	SERIAL NO.:
54320.000008 INVENTOR'S NAME:	09/824,053
Peter STOUGAARD et al.	EXAMINER: Unassigned
FILING DATE: April 3, 2001	GROUP: 1646 1652

#### U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER						DATE	NAME CLASS SUBCLASS		FILING		
	1.	2	7	8	3	1	5	0	02/26/57	Luther		<del></del>	DATE
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www	8.	5	9	1	6	6	0	17	06/29/99	Mutsaers et al.			ļ
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www	9A	6	2	5	1	6	2	6	06/26/01	Stougaard et al.			
Wow	10.	6	3	5	8	5	4	3	03/19/02	Søe et al.			

#### FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSI	LATION
	11.	2,012,723				_	YES	NO
			09/90	Canada				
	12.	JPA92084848	03/92	Japanese Patent Abstract	<del></del>			
	13.	B1-321-811	06/89	European Patent Specification	+			
	14.	B1-338-452	10/89	European Patent Specification	-			
Warn	15.	Patent 39,483	Apparent filing date 9/12/94	CHILE				
www	16.	JP73016612	12/70	JAPAN and GREAT BRITAIN, Abstract owley.				
	17	JP73016612 ** (Japanese Unexamined Patent Publication No. 48-16612)	12/70	JAPAN Full English Translation		-		
EXAMINER			DATE CON	SIDERED	1		1	

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

\*\*NOTE: This reference was inadvertently identified as JP7301661 in the Supplemental IDS of April 26, 2001 in the prior application. Nonetheless, it is clear from the context of that IDS that it was in fact JP73016612. The English translation filed was that of JP73016612.



FORM PTO-1449 (REV. 7-80)

# U.S. DEPARTMENT OF COMMERCE

### LIST OF MATERIALS CITED BY APPLICANT

(Use several sheets if necessary)

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INVENTOR'S NAME: Peter STOUGAARD et al.	EXAMINER: Unassigned
FILING DATE: April 3, 2001	GROUP: 1646 / 652

#### FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSL	ATION
	<del> </del>						YES	NO
Wwm	18.	4301904A1	2/94	GERMANY, English Abstract &				<del> </del>
www	10	77 000		English translation of claims 44 /9.			ł	
	19.	EP 0396 162	1/7/1993	EUROPE				
	20.	Abstract, JP 1994000010444	10/25/94	JAPAN			<del> </del>	<del> </del>
	21.	Abstract, JP 07274807 A	10/24/95	JAPAN				
	22.	Abstract, JP 07-274807	10/24/95	JAPAN				<u> </u>
	23.	Abstract. JP 04207146A	7/29/99	JAPAN				l 
	24.	Abstract, JP 04207145	7/29/99	JAPAN				
	25.	Abstract, JP 03164127	07/16/99	JAPAN				
	26.	Abstract, JP 61085158	04/30/86	JAPAN				
	27.	WO 95129996	11/09/95	EUROPE PCT				
	28.	EP A 0468731	07/22/91	EUROPE				
	29.	DE A 1050703	03/26/56	GERMANY				
	30.	Abstract, JP A 6296467	1994	JAPAN				
	31.	WOA-9501727	01/19/95	EUROPE PCT				
	32.	0 682 116	11/15/95	EUROPE				
	33.	Patent Application No. 1363-	08/07/96	CHILE				
wore		1995	00/0//70	CHILE				
,	34.	Patent Application No. 1376-	09/20/93	CHILE				
Wur		1992			İ		1	
	35.	Patent Application No. 1595-	04/01/96	CHILE	<del></del>			
arm		1994						[
	36.	Patent Application No, 858-1991	03/10/92	CHILE				
	37.	Patent Application No. 875-1994	05/08/96	CHILE				
EXAMINER			DATE	CONSIDERED				

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ATTY. DOCKET NO.: SERIAL NO.: 54320.000008 09/824,053 INVENTOR'S NAME: **EXAMINER:** Peter STOUGAARD et al. Unassigned FILING DATE: GROUP: 1646 1657 April 3, 2001

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(Use several sheets if necessary)

FOREIGN PATENT DOCUMENTS

	FOREIGN PA	ATENT DOCUMENTS						
MENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSI	LATIO		
					YES	N		
cation No. 2,224,143	12/12/96	CANADA			<del> </del>	-		
cation No. 875-95	Apparent filing date 06/16/95	CHILE	NO TECH CEN	ECEIV	ED			
cation No. 1363-95	Apparent filing date 09/07/94	CHILE	TECH CEN	70 5 200	2			
cation No. 2,157,718	03/08/96	CANADA		<sup>IER</sup> 1600.	ha.			
ation No. 2,134,597	04/30/95	CANADA		- 000//	900 —			
ation No. 2,151,978	12/18/95	CANADA						
., 1973, Biochemica e		Acta, 309:11-22						
ssid, 1956, <i>J. Biol. Cl</i>		cluding Author, Title, Date,	rerunent Pages, Etc.	)				
Methods Enzymol., 8								
Rand, 1972, Journal of Food Science, 37:698-701								
<ul> <li>Bak et al., "A Method for Testing the Strengthening Effect of Oxidative Enzymes in Dough", presented at a symposium ent "Wheat Structure, Biochemistry and Functionality", Reading UK, 10-12 April 1995</li> <li>Christiansen, 1993, "Application of Oxidoreductases for Food Preservation" in Progress Report of R&amp;D Projects and Concentrations published by the European Communities, Luxembourg, 1993, p. 32-36</li> </ul>								
							<ul> <li>Kerschensteiner, The Mechanism of Action and the State of Copper in Hexose oxidase, Thesis, 1978, p. iii-xiii</li> <li>Perella, F.W., Analytical Biochemistry, 174:437-447 (1988)</li> </ul>	
AACC Method 36-01A								
"Enzyme Technology in Flour Milling and Baking", Baking Industry Europe (Alan Gordon, editor), S. Haarasilta and T. Pullinen (1993), pp. 49-52								
nenclature 1984 (Reco		s of the Nomenclature Committ ne-Catalysed Reactions)" (1984				гу		
. 72-86	pernes, Preser	it and Potential Applications",	Soc. Chem. Ind. (Lond	den), (1961),				
nzymology", <i>Biomas</i> o. 306-317	s Part B Gluco	ose Oxidase of Phanerochaete	chrysosporium, R.L. H	Celley and C	.A. Redd	y		
5. 306	-317	-317	-317	-317	<u>-317                                    </u>	<u>-317</u>		

**EXAMINER** 

(REV. 7-80)

DATE CONSIDERED

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FORM PTO-1449 (REV. 7-80)

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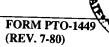
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ATTY. DOCKET NO.: 54320.000008	SERIAL NO.: 09/824,053
INVENTOR'S NAME:	EXAMINER:
Peter STOUGAARD et al.	Unassigned

FILING DATE: GROUP: 1646 April 3, 2001

		OTHER MATERIALS (Including Author, Title, Date, Pertinent Pages, Etc.)  TECH CEN
	57.	Definition of "hexose", Webster Dictionary, p. 1065
	58.	"Baking Science & Technology", E.J. Pyler (1982), vol. 1, pp. 314-316
	59.	"Novel Enzyme Combinations A New Tool to Improve Baking Burks In the Province of the Province
	60.	"Novel Enzyme Combinations A New Tool to Improve Baking Results", Agro-Industry Hi-Tech, S. Haarasilta and T. Pullinen,
	00.	"Enzyme Nomenclature (Recommendations of the Nomenclature Committee of the International Union of Biochemistry and Molecular Biology on the Nomenclature and Classification of Enzymes)" (1903)
	61.	Molecular Biology on the Nomenclature and Classification of Enzymes)" (1992), page 56 "Enzyme Function", Experimental Report from Novo Nordisk, 3/13/97, 2 pages
	62.	J. Chromatog., Knoll et al., 55 (1971), 425-428
	63.	"DEFO®" A glucoca avidese and eathly
		"DEEO®" A glucose oxidase and catalase enzyme system product sheet from Miles laboratories- Enzymes from Miles (technical Information) (1976), 5 pages
	64.	"Enzymes in Food Processing", 2 <sup>nd</sup> Ed. by G. Reed, Universal Foods Corporation, Academic Press (1975), p. 222-229
	65.	1 Topothos and Applications of the Ephasi Engume Cluster O. 11. 11
		Symposium on Enzyme Chemistry", Tokyo and Kyoto, (1957) L.A. Underkofler, (1958), pp. 486-490
	66.	The state of the cost and related Components by Camerose Avadence from A and the state of the st
	67.	Vol. 3(4), 1964, 578-583
	"	"Technology of Cereals (with special reference to wheat)", 2 <sup>nd</sup> Ed., Pergamom Press Ltd. N. L. Kent, (1975), pp. iv-v, 48-49,
	68.	"Gluzyme™" product sheet from Novo Nordisk Enzyme Process Division, January 1994, 2 pages
	69.	Derwent Publications Ltd., London, GB; class D13, AN 73-30288u XP002012361 & JP, A48016612 (EISAI CO. LTD.)
	70.	Clare et al., 1991, Bio/Technology 9:455-460 [3]
	71.	
		Cregg et al., 1987, In: Biological Research on Industrial Yeast, Vol. II, Stewart, G.G. et al. (Eds.), pp. 1-18 [4]
	72.	Fernandez et al., 1992, Analytical Biochemistry, 201:255-264 [5]
	73.	Pedersen et al., 1996, J. Biol. Chem. 271:2514-2522 [10]
	74.	Sahm et al., 1973, Eur. J. Biochem. 37:250-256 [12]
	75.	
<u> </u>		Tschopp et al., 1987, Bio/Technology 5:1305-1308 [17]
	76.	Barkholt, V. and A.L. Jensen, 1989, Amino Acid Analysis: Determination of Cysteine plus Half-Cysteine in Proteins
		as Additive, Analytical Biochemistry 177:318-322
	77.	Fernandez, J. et al., 1994. An Improved Procedure for Enguration Distriction of the Procedure for Enguration Distriction D
		1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
	78.	Groppe, J.C. and Morse, D.E., 1993, Isolation of full-length PNIA torrelates for
		rich in RNase and proteoglycans, Anal. Biochem., 210:337-343
	79.	
		Kerschensteiner, D.A. and Klippenstein, D.A., 1978, Purification Mechanism and State of Copper in Hexose Oxidase, Federation Proceedings 37:1816 abstract
EXAMINER	<u> </u>	
	_	DATE CONSIDERED

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# S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

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f		
		OTHER MATERIALS (Including Author, Title, Date, Pertinent Pages, Etc.)
	80.	Laemmli, U.K., 1970, Cleavage of structural Proteins during the Assembly of the Head of Bacteriophage ACH CEANS.
	81.	OTHER MATERIALS (Including Author, Title, Date, Pertinent Pages, Etc.)  Laemmli, U.K., 1970, Cleavage of structural Proteins during the Assembly of the Head of Bacteriophage PCH CENTER 1600, Nature (London), 227:680-685  Schägger, H. and von Jagow, G., 1987, Tricine-Sodium Dodecyl Sulfate-Polyacrylamide Gel Electrophoresis for the Separation of Proteins in the Range from 1 to 100 kDa, Analytical Biochemistry 166:368-379
	82.	Sock, Jr. and Rohringer, R., 1988, Activity Staining of Blotted Enzymes by Reaction Coupling with Transfer Membrane-Immobilized Auxiliary Enzymes, Analytical Biochemistry 171:310-319
	83.	Yeh, K-W, Juang, R.H. and Su, J-C, A Rapid and efficient method for RNA isolation from plants with high carbohydrate content, Focus 13 (3):102-103, 1991
	84.	Maes et al., Analytica Chimica Acta, 284 (1993) 281-290
	85.	Sambrook, J., Fritsch, E.F. and Maniatis, T., 1989, <i>Molecular Cloning, A Laboratory Manual</i> 2 <sup>nd</sup> Ed. Cold Spring Harbor, NY
	86.	PCT International Search Report for PCT/DK96/00238, issued 04/11/96
	87.	International Search Report from the International Searching Authority in PCT/DK96/00239 issued 9/11/96
	88.	The Examiner's Report on Application for Patent of Invention (Chilean Application No. 939-96) and English translation thereof
	89.	Dowling et al., "Hexose Oxidation by an enzyme system of Malleomyces Pseudomallei", Journal of Bacteriology (1956)
	90.	Bean et al., "Carbohydrate Metabolism of Citrus Fruits", Journal of Biological Chemistry (1961) 236: 1235-1240
	91.	Witteveen, C.F.B.: Thesis "Gluconate formation and polyol metabolism in <u>Aspergillus niger</u> ", selected pages (1993)
	92.	AACC Method 54-10
	93.	Ellman, George L.: "A Colorimetric Method for Determining Low Concentrations of Mercaptans", Archives of Biochemistry and Biophysics (1958) 74: 443-450
	94.	U.S. Patent Application Serial No. 09/932,923 filed August 21, 2001
EXAMINER	<del></del> !	DATE CONSIDERED

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.